**Head Full of Numbers**

**Standard**: CC.2.1.1.B.3 Use place-value concepts and properties of operations to add and subtract within 100.

**Practice Standard:** Standard 7, Look for and make use of structure

**Mental Math Activity:**

This activity is a game for purchase by Learning Resources. However, you could make a quick version of this game inexpensively. Students play in groups of 3-4 ideally.

1. Begin with 6 number cubes (you could use dice) in a cup.
2. Shake a roll out the number cubes, and allow students to write down the numbers that were rolled.
3. Students use a small minute timer to time them for one minute while mentally creating equations using only the digits shown.
4. For Instance, if the numbers 3, 4, 1, 7, 6, and 2 were rolled, possible equations could include 3+4=7, 6-2=4, 6 divided by 2 times 1 is 3. (These can get very complex. Allow use of multiple or even ALL number cubes)
5. Allow students to reverse number combinations so they are able to see the use of inverse operations and fact families.
6. Compare results with peers when the time is up. Calculate one point for each true equation (consult the group for accuracy) and two points for every equation that is unique among the group (one that you thought of, but no one else did).

**Modifications:**

1. Eliminate the timer for beginning students
2. Allow manipulatives if necessary

**Extensions:**

1. Include more number dice
2. Provide less time
3. Challenge to use more than 3 cubes in an equation

**Questions to Surface the Mathematics:**

1. Why was this round harder for your group?
2. Why was this round very easy for your group?
3. Was there a number you couldn’t use? Why?
4. How is it possible to have multiple equations with exactly the same numbers?